INSTRUCTION MANUAL

MODEL 601 TYPE 1

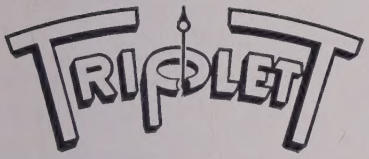
SOLID STATE

VOLT-OHM-MILLIAMMETER

MP MASTER

MA26276

INSTRUCTION MANUAL



MODEL 601 TYPE 1
SOLID STATE V-O-M

THE TRIPLETT ELECTRICAL INSTRUMENT CO.
BLUFFTON, OHIO

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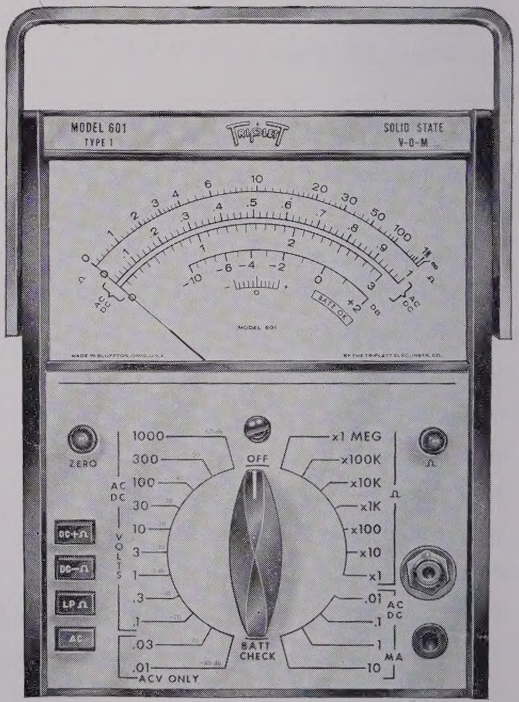


MODEL 601

Solid State VOM

SPECIFICATIONS

DC VOLTMETER (+DCV, —DCV)

Ranges:
0, 0.1, 0.3, 1.0, 3.0, 10., 30., 100., 300., 1000.

Accuracy:
±2% of full scale all DC ranges, except 1000 V ±3%.

Input Resistance:
10.8 megohms on all ranges.

AC Rejection:
A voltage of 60 Hz 40 dB greater than full scale affects reading less than 1%.

AC VOLTMETER (ACV, dB)

Ranges:
0, .01, .03, 0.1, 0.3, 1.0, 3.0, 10., 30., 100., 300., 1K.
—40, —30, —20, —10, 0, +10, +20, +30, +40, +50, +60 dB (—12 to 2 Scale).

Accuracy:

Range	Frequency	Accuracy
.01 to 10 v	50 Hz to 20 KHz	±3%
	20 KHz to 50 KHz	±5%
30 v to 300 v	50 Hz to 1 KHz	±3%
	1 KHz to 20 KHz	±5%
1000 v	50 Hz to 1 KHz	±3%
	1 KHz to 5 KHz	±5%

Input Impedance:
10 mv to 1 v.
10 megohm shunted by 31 pf.

3 v to 1000 v.
10 megohm shunted by 20 pf.

OHMMETER

Resistance Ranges — For both functions Low Power Ohms and Conventional Ohms X1, X10, X100, X1K, X10K, X100K, X1 Meg. — 10 ohms center scale.

Max. power applied to device under test on the X1 range.
Low Power Ohms — 100 Microwatts
Conventional Ohms — 56 Milliwatts

On all higher ranges the power applied is correspondingly less.
Accuracy 3 degrees of arc.

CURRENT MEASUREMENTS (AC, DC)

Ranges:

10 uA, 100 uA, 1 MA, 10 MA.

Accuracy:

3% DC and 4% AC.
Circuit voltage drop 100 Millivolts AC or DC on all ranges.

METER

50 uA Suspension Movement with 4 1/8 inch scale length.

POWER SOURCE

Batteries:

10 — AA Penlite Eveready E91 or equivalent, or Mercury Cells Eveready E9 or equivalent.

CONSTRUCTION

Black molded high impact plastic case; outside dimensions 3 3/16" x 5 1/8" x 6 1/2" with metal handle that can be used to place instrument on approximately 25° angle. Etched aluminum panel.

WEIGHT

Approximately 3 pounds with batteries.

ACCESSORIES supplied with Model 601

1 Probe Assembly
1 Probe Cable
10 Batteries
2 Alligator Clips
1 Instruction Book

ACCESSORIES AVAILABLE

Leather Carrying Case Model 639-OS	Part No. 101-793
High Voltage Probe (for adjusting critical high voltage on color TV sets)	Part No. 79-270
R.F. Probe	Part No. 79-264

GENERAL DESCRIPTION

The Solid State Volt-Ohm-Milliammeter is one of the most useful instruments in the electronic field, both in the laboratory and for service. Its high input impedance and wide frequency ranges give it considerable advantage over other types of voltmeters. The Triplett Model 601 combines the advantages of a vacuum tube voltmeter with the portability of the VOM.

The Model 601 is designed to measure DC voltages, resistance, AC-DC current and AC RMS values. By adding color to the various ranges and combining the DC and AC voltage readings the meter dial has been simplified and made easier to read. Your Model 601 is designed with a number of features to protect the highly sensitive meter.

The meter controls are clearly marked on an etched aluminum panel. All measurements are made on a five-inch meter with a single switch knob controlling all ranges.

One probe is used for all functions: DC, AC, MA and OHMS. The small, compact probe has a built-in sliding switch which places a 690 K ohm resistor in series with the instrument on DC voltage readings. The Model 601 is frequency compensated from 50 Hz to 50 KHz. The solid-state circuit design requires no warm-up period and readings may be made immediately.

To insure longest battery life, be sure the selector switch is placed in the off position when the meter is not in use.

PRELIMINARY ADJUSTMENTS

The following procedure and adjustments should be made before using your Model 601. In following this procedure, you will familiarize yourself with this tester and at the same time, increase the efficiency and your use of it.

Installing Batteries

1. Unscrew the large nut in the rear of the case and pull the tester out of the case.
2. Loosen two screws to free six unit battery rack from PC board studs.
3. Install the recommended batteries as shown in Fig. 1. Observe the polarity marking so that the battery + is on the same side as the + in each battery compartment.

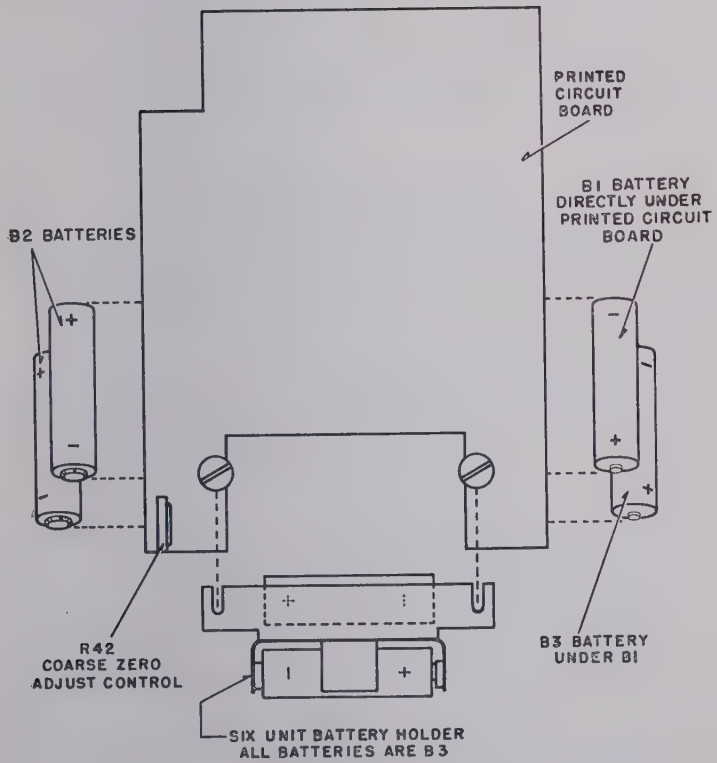
10 AA Penlite Cells are used. These may be alkaline or mercury types. For extremely long life and stability, mercury types are recommended. For excellent zero stability and good performance at moderate cost the following combination is recommended—two mercury types in the zero reference circuit, batteries B2. For B1 and B3 circuits use eight alkaline batteries.

Battery Types

Alkaline	Mercury
Eveready E91, or equivalent.	Eveready E9, Neda 1103 or equivalent.

Mechanical Zero Adjust

1. Turn instrument off.
2. Rotate meter adjustment screw, located below meter face until pointer indicates zero exactly.



Battery Location

Fig. 1

Set SELECTOR SWITCH to BATTERY TEST position. An indication in the "BATT OK" area indicates usable batteries.

Set PUSH BUTTON SWITCH to DC+Ω and SELECTOR SWITCH to 1 KV range. Adjust panel ZERO ADJUST for zero indication. If it will not adjust, refer to page 24 under Electrical Zero Adjustment.

BATTERY REPLACEMENT

The batteries used are in three different circuits. The type, life expectancy, and quality test for each is described below:

B1 — Ohms Battery
Eveready Type E91, E9 or equivalent. The ohms battery is discharged only when resistance measurements are being made. This battery should be replaced when the ohms adjust control will no longer calibrate the ohm range to full scale.

B2 — Zero Reference Battery
Eveready Type E9 or equivalent. The zero reference battery supplies a bias potential required by the amplifier. To eliminate drift, these cells are constantly loaded by a small current. Life of these cells is limited by chemical deterioration, not electrical discharge. They should be replaced every two years or when zero drift becomes excessive.
Eveready Type E91 or equivalent cells may be used here if a zero drift of approximately one millivolt per day can be tolerated.

B3 — Amplifier Supply Battery
Eveready Type E91, E9 or equivalent. The amplifier load is approximately 0.8 MA in the DC mode and 1.2 MA in the AC mode. Battery life is approximately 1000 hours.

Replacement is needed when battery test indication is less than BATTERY OK section.

NOTE

The battery test indicates quality of the cells in B-3 group **only.**

BATTERY CONSERVATION HINTS

The greatest battery drain occurs in the ohmmeter position on the X1 range in conventional ohms. The drain on B1 is approximately 150 MA when the test leads are shorted together. The drain is considerably less on higher ohms positions. It is therefore recommended that the higher ohms ranges X10, X100, X1K be used whenever practical. If it is necessary to use the X1 range quite frequently it is recommended that the L.P.Ω mode be used. In this mode the maximum current drain is only 7.5 milliamperes.

The instrument should not be left in the L.P.Ω mode for extended periods since the drain of 7.5 MA is continuous on B1 whether the test leads are shorted or not.

The minimum current drain mode is DC Volts where the current is approximately .8 MA.

10 DC VOLTAGE MEASUREMENTS

The Probe switch should be in the DCV position for all DC voltage measurements.

The probe is positive when the push button switch is in the +DC Volts position and negative when in the —DC Volts position.

1. Set the push button switch to desired function: +DC Volts or —DC Volts.
2. Short test leads together and adjust ZERO control for zero pointer indication.
3. Select a higher voltage range than the voltage to be measured and connect the ground clip to ground (or the lowest potential of circuit under test).
4. Connect the probe tip to the high side of the voltage to be measured.
5. Set the selector switch to the position that gives a reading nearest full scale and read on the scale corresponding to the range setting.
6. NULL MEASUREMENT can be performed by setting the zero to the center scale null line with the ZERO ADJUST CONTROL, on the .1, 1, 10, 100 and 1 KV ranges only. Low batteries may require adjustment by COARSE ZERO CONTROL, explained page 24, Electrical Zero Adjustment.

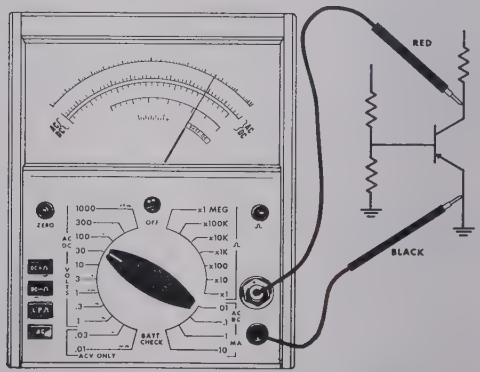


Fig. 2. Measuring DC Volts

AC VOLTAGE MEASUREMENTS

The probe switch should be in the ACV, OHMS, MA position for all AC voltage measurements. Values are read on the black scale.

1. Set the push button switch to ACV.
2. Select a higher voltage range than the voltage to be measured.
3. Connect the ground clip to ground (or the lowest potential of circuit under test).
4. Connect the probe tip to the other side of the voltage.
5. Reset the selector switch for a reading nearest full scale.
6. The AC voltage is then read on the scale corresponding to the range setting.

NOTE

No zero adjustment is required in the ACV function. However, stray pick-up will cause an indication on the high sensitivity ranges.

The turn-on transient of the amplifier will momentarily peg the meter. This, however, causes no damage to the meter.

To minimize battery drain, the instrument's AC amplifier operates only in the ACV position; therefore, when not in use the instrument should be turned off or set to the DC Volts function.

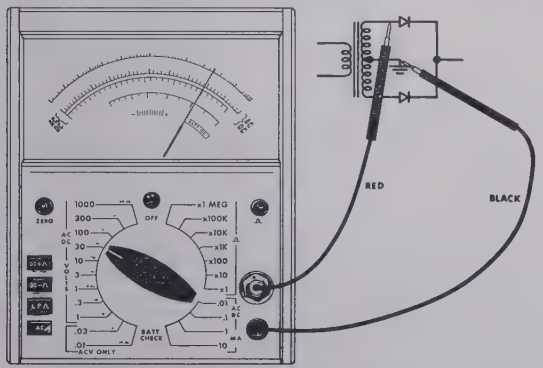


Fig. 3. Measuring AC Volts

RESISTANCE MEASUREMENTS

The Model 601 contains two ohms test circuits, a conventional circuit with a 1½ volt battery as a power source, and a low power circuit with a power source of 75 Millivolts.

The conventional ohms circuit is selected by depressing one of the first two push buttons DC+Ω or DC—Ω. With the DC+Ω button depressed a positive voltage is presented to the red probe tip and negative to the black ground lead. With the DC—Ω button depressed a negative voltage is applied to the red probe and a positive voltage to the ground lead.

The low power ohms circuit is selected by depressing the L.P.Ω button. No polarity reversing is provided in this position since the low potential used in this circuit is below the threshold of conduction of most semiconductors.

The low power ohms circuit is most useful for checking resistances in circuit since it eliminates the errors caused by silicon diode or transistor loading.

The circuit is also safe for checking resistances between terminals of Integrated Circuits.

The maximum power applied to the device under test is .1 milliwatt on the X1 range and is considerably less on all other ranges.

The conventional ohms test circuit is handy for checking forward and reverse resistance of semiconductors. With the polarity reversing feature the test leads need not be exchanged, the push buttons provide the polarity reversal.

CAUTION

BE SURE THAT THERE IS NO EXTERNAL POWER TO RESISTOR UNDER TEST. FALSE READINGS OR A BLOWN FUSE MAY RESULT.

1. Check meter zero on the 1 KV range, +DCV function.
2. Depress push button to desired ohms function, either DC+Ω, DC—Ω or L.P.Ω.
3. Turn the SELECTOR SWITCH to the range which will best cover the resistance to be measured.
4. Check for ∞ with leads open. To reset, adjust the OHMS ADJUST CONTROL.
5. Set the test probe to OHMS.
6. Connect the unknown resistance between the test leads, making sure that it is isolated from any other circuit components which might introduce error.
7. Read the numerical value from the scale directly and apply the multiplying factor for the setting of the RANGE SWITCH.

NOTE

With the test lead shorted in the Rx1 range, the test lead resistance is indicated on the meter. This resistance should be subtracted from the value measured.

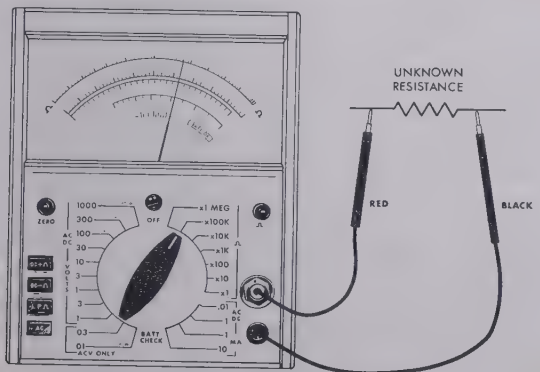


Fig. 4. Measuring DC Resistance

DB MEASUREMENTS

The DECIBEL SCALE can be used to determine power level based on 0 dB = 1 mW in 600 OHMS. The operation of the Model 601 is the same as AC Voltage Measurements. The numerical value is indicated by meter scale and added to the dB value for the position of the RANGE SWITCH.

Refer to Fig. 6 for decibel correction for impedance other than 600 ohms.

The following formula or Fig. 7 can be used to convert the dB reading into watts:

$$P_{(watts)} = (1 \times 10^{-3}) \text{ antilog } (dB/10)$$

$$P_{(mw)} = \text{antilog } (dB/10)$$

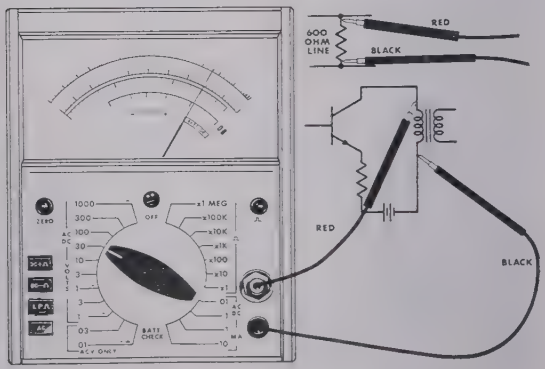


Fig. 5. Measuring DB

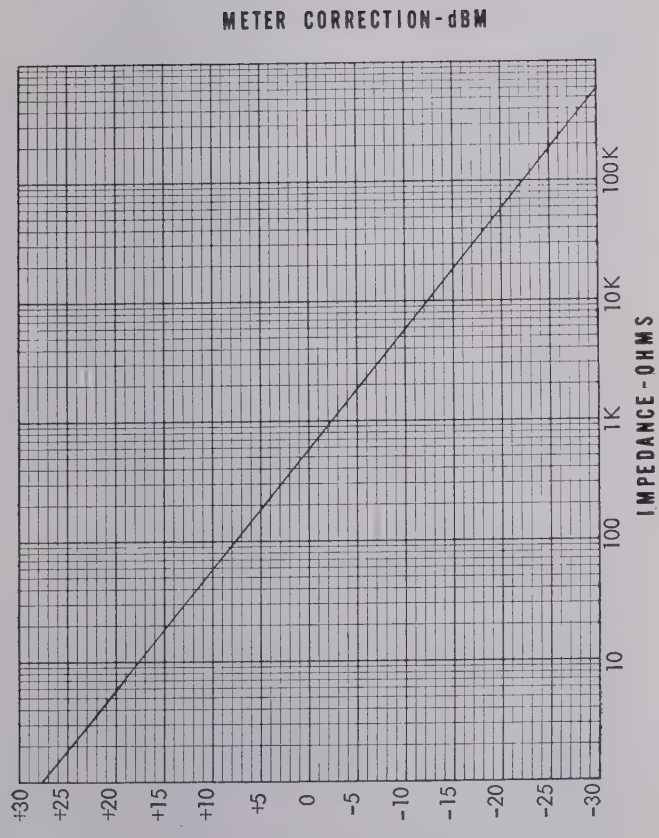


Fig. 6. DB Correction Chart

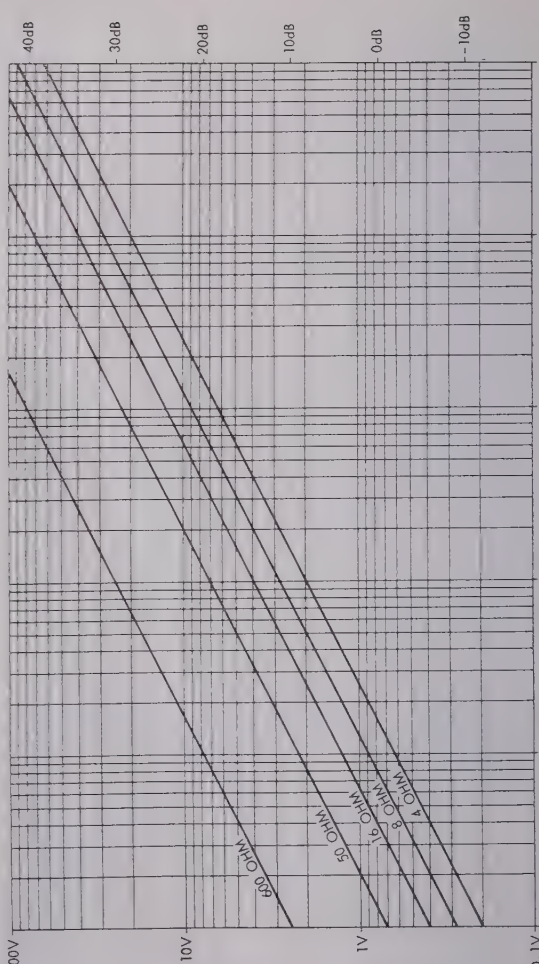


Fig. 7. Voltage vs. Power

CURRENT MEASUREMENTS

The Model 601 provides four current ranges, these are: 10 UA, 100 UA, 1 MA and 10 MA. The circuit voltage drop for a FS reading on all ranges is 100 Millivolts. DC or AC currents (50 cps to 50 KC) can be measured.

1. Set switch on probe to the MA position.
2. Rotate selector to the desired current range—if current area is unknown set to the highest current range.
3. If AC current is to be measured, depress AC push button. If DC current is to be measured, depress the DC+Ω push button.
4. Check zero on the meter, if off, adjust zero adjust control as in DC Voltage Measurements set up. For AC measurements zero adjust is unnecessary.
5. Connect the red probe to the positive source of current to be measured and black ground lead to the negative terminal. For AC measurements observance of polarity is unnecessary.
6. The current is then read on the 0-1 scale using the appropriate scale multiplier. Reset selector for a reading nearest full scale if necessary.

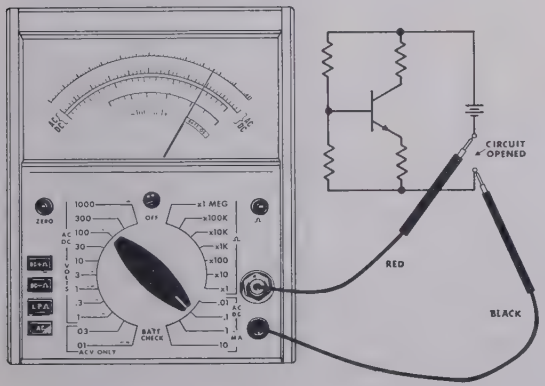


Fig. 8. Measuring Current

NOTE

If currents greatly in excess of 10 MA are applied to the Model 601 in current measurement, the fuse located on the P.C. board will blow. The fuse should be replaced immediately since it affects other measurement circuits. For your convenience a spare fuse is included with your Model 601.

CIRCUIT DESCRIPTION

GENERAL

In the DC mode of operation, an amplifier using a field effect transistor at the input provides impedance conversion and drives the meter. Precision voltage dividers extend the range from the basic 100 MV sensitivity to 1000 V. In the AC mode, an additional amplifier provides the necessary gain for 10 MV sensitivity.

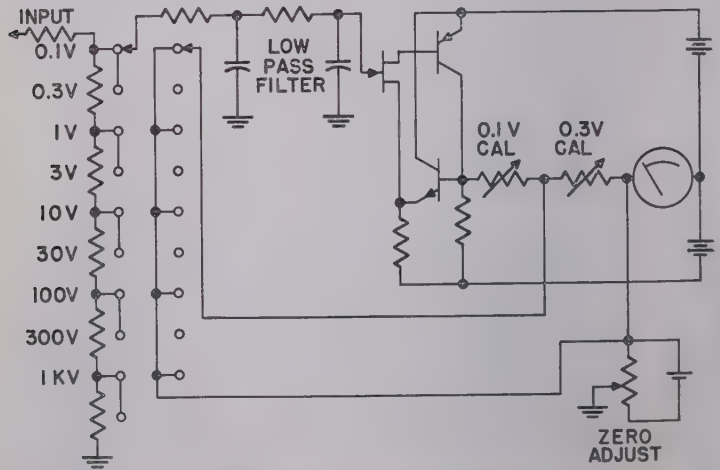


Fig. 9. Simplified Schematic DC Voltmeter

The DC input voltage at the test probe is applied through a voltage divider to the amplifier. Basic attenuation is in decade steps, with intermediate ranges achieved by reducing amplifier sensitivity.

OHMMETER

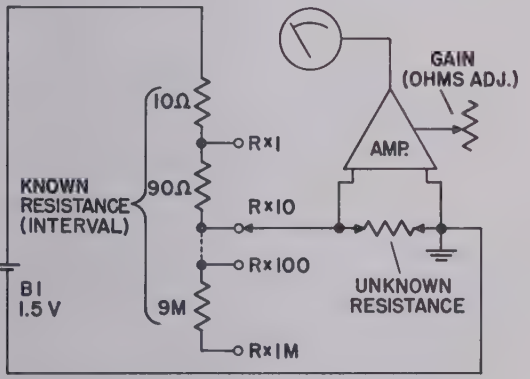


Fig. 10. Simplified Schematic Ohmmeter

When an unknown resistance is connected across the input, it is placed in series with a portion of the voltage divider network and battery. The voltage drop across the known and unknown resistance is proportional to their value since the same current flows through each. The voltage across the unknown is applied to the amplifier. The meter deflection is calibrated in terms of resistance.

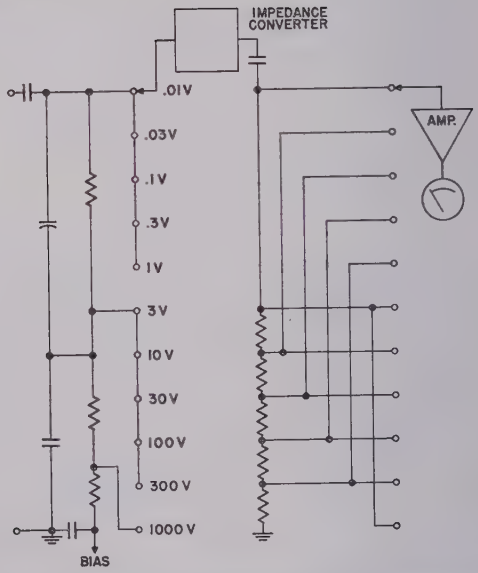


Fig. 11. Simplified Schematic, AC Voltmeter

AC voltages less than one volt magnitude are fed directly into an impedance converter circuit. The output of this stage is attenuated to give 10 MV input to the amplifier at full scale on any range. Voltages between 1 V and 1000 V are attenuated 50 dB by a compensated attenuator before impedance conversion.

The AC amplifier is conventional with DC feedback from Q5 emitter to Q4 base for bias stability. The output is detected by an average responding detector and applied to the meter. Current feedback from the detector to the emitter of Q4 provides gain stability and linearity.

MAINTENANCE

This section contains testing and service information. Periodic routine maintenance required by the Model 601 is replacement of batteries.

Repair and Service

The Triplett Company suggests when you send your tester in for repair or service you indicate the nature of service required. By supplying this information the Triplett Co. or our service stations can serve you better and you will receive your tester back in less time.

Inoperative Unit

Should your Model 601 become inoperative, the first recommended step is a battery check. This is given in the battery installation section. One can also use a VOM and check all batteries individually.

Fuse

The fuse when burned out will affect all measurement circuits, therefore, render the entire tester inoperative. The fuse will most likely blow during current measurements when overloaded or in resistance measurements when the resistance under test has power applied to it.

Fig. 13 shows location of the fuse. The fuse type is 2 amp 8 AG or equivalent. A spare fuse is located in a depression behind the meter. Fig. 14 gives the location.

PERFORMANCE CHECK

Required Test Equipment

1. A DC Voltage source to supply voltages from 0.1 V to 1 KV accurate within 0.5%. A Hewlett-Packard Model 738 BR is recommended for DC and AC checks and calibration.
2. An AC Voltage source to supply voltages from 0.1 V to 300 V accurate within 0.5%. Same as above, HP Model 738 BR.
3. An AC Voltage transfer standard, to produce accurate

PERFORMANCE CHECK—Cont'd.

voltages over the frequency range of 10 Hz to 100 KHz such as a Hewlett-Packard Model 652 A.

4. Accurate Resistors as listed:

10 Ohm	±0.1%,	10 K	±0.1%
100 Ohm	±0.1%,	100 K	±0.1%
1000 Ohm	±0.1%,	1 Meg	±0.1%
		10 Meg	±0.1%

DCV

Set switches to the 0.1 V +DCV mode. Set probe switch to DCV. Check zero.
Apply rated full scale voltage to each range of the +DCV function.
The indication error shall be no greater than 2%.
Repeat above on the —DCV function.

ACV

Set switches to the .01 V ACV mode. Set probe switch to ACV.
Apply rated full scale voltage to each range of the ACV function.
The indication error shall be no greater than 3%.
Switches remain on the .01 V ACV mode. Probe switch remains on ACV.
Using a transfer standard check frequency response from 50 Hz to 50 KHz
The indication error shall be no greater than 3% to 20 KHz and 5% from 20 KHz to 50 KHz.

OHMS

Set probe switch to OHMS.
Set switches to the 1 KV +DCV mode. Check zero.
Set switches to the Rxl OHMS mode. Adjust OHMS ADJUST CONTROL for full scale indication.
Connect the center scale value of resistance to each range of the ohms function.

Check both conventional and LP ohms.
The indication error shall be less than 3 degrees of arc.

CURRENT RANGES

These need not be checked since they are a function of the AC and DC voltage circuits.

Low Power Ohms Adjustment

The LP ohms circuit utilizes the DC Amplifier as does the conventional ohms circuit. In the conventional ohms circuit the DC amplifier sensitivity is set at approximately 1½ Volts F.S., the sensitivity is controlled with the Ohms Adjust Control. In the LP ohms circuit the DC Amplifier sensitivity is set to about 75 millivolts F.S. and this is also controlled with the Ohms Adjust Control. Since the sensitivity is much greater in the LP ohms, the zero adjust should be made in this function first, then when switched to the conventional ohms position the zero setting should remain constant.

For F.S. correlation between the two ohms circuits an additional internal potentiometer is provided. The adjustment is made as follows:

1. Depress LP ohms push button.
2. Set range selector to X1K.
3. Set probe switch to ohms.
4. Short probe tip to ground lead.
5. Adjust zero adjust for zero on the meter.
6. Depress push button to + or — conventional ohms.
7. Separate probe tip from ground.
8. Adjust ohms adjust control for F.S. — ∞ at the high end of scale.
9. Depress push button to LP ohms.
10. With the test lead still open adjust R35 located on the printed circuit board (see Fig. 12) for F.S. — ∞ —.

    If these adjustments are made carefully the zero and F.S. indications for both ohms circuits should correlate when switching from one to the other. As the ohms battery ages it may be necessary to repeat these adjustments.

CALIBRATION

1. Remove case — loosen thumbscrew in the back. Pull case from instrument.

Mechanical Zero Adjustment

1. Turn instrument off.
2. Rotate meter adjustment screw, located below meter face until pointer indicates zero exactly.

Electrical Zero Adjustment

Due to change in battery voltages, it may be necessary to reset the COARSE ZERO ADJUST control located on PC Board. To do this:

1. Set PUSH BUTTON SWITCH to DC and SELECTOR SWITCH to 1 KV range. Rotate panel ZERO ADJUST to clockwise stop.
2. Adjust COARSE ZERO CONTROL (R42 on PC board, see Fig. 1) to approx. 3/4 of full scale. This is not critical, and renders the 601 usable as a null detector. Adjust panel ZERO ADJUST for zero indication (O).

NOTE

The ZERO ADJUST CONTROL is most sensitive in the 0.1, 1, 10, 100, 1 KVDC ranges. Therefore, the most accurate zero setting can be obtained in these positions.

An incorrect mechanical zero adjustment is most often the cause of shift in zero indication between ranges or functions.

Calibration

Set switches to the 0.1 V +DCV mode. Set probe switch to DC.

Apply +0.1 VDC from a calibrator and adjust R37 for exactly 1.0 indication.

Set RANGE SWITCH to the 0.3 V range.

Apply +0.3 VDC from a calibrator and adjust R40 for an indication of 3.0 exactly.

CALIBRATION—Cont'd.

R37 must be adjusted before R40 for correct calibration.

Set controls to the .01 VAC mode. Set probe switch to AC.

Apply .01 VAC from a calibrator and adjust R13 for exactly 1.0 indication.

Set the range switch to the 3 V range.
Using a transfer standard obtain a reference indication near full scale at a frequency of 400 Hz. Apply the exact same magnitude of signal at 20 KHz and adjust C10 until indication is exactly as the reference reading.

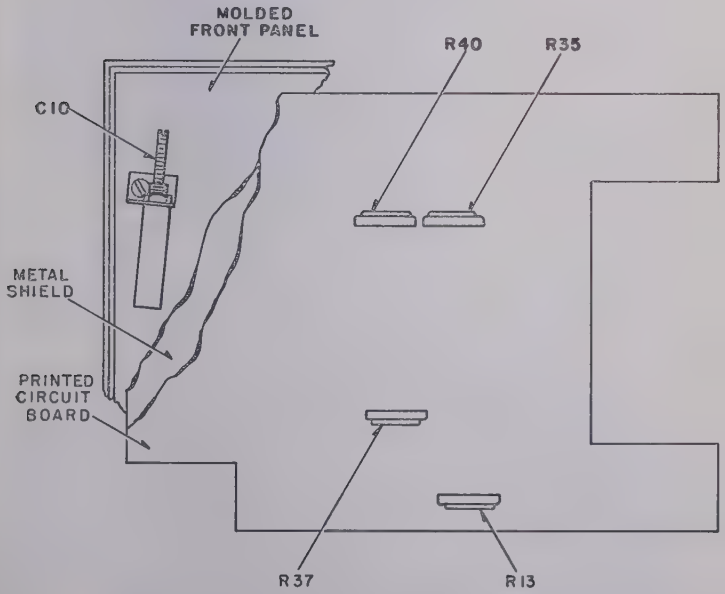


Fig. 12. Location of Calibration Controls

TROUBLESHOOTING CHART

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Instrument will not zero, meter bangs upscale or downscale, on DCV ranges.	1. Incorrect setting of coarse zero control.	Readjust R42
	2. Defective coarse zero control.	Replace R42
	3. 10.5V batt. supply to ampl. dead, broken wire on battery pack.	Replace
	4. Low batteries.	Check each battery - 1.35V min.
	5. Defective battery sheath (metal cover shorted to internal battery).	Check each battery for shorted cover.
	6. Defective Q1.	Replace
	7. Defective Q3.	Replace
	8. Defective X1.	Replace
(zero balance drifts)	9. Fuse or DC voltage divider open.	Check for open fuse and voltage divider.
DC zero changes when tester is cased, or batteries get hot.	Same as #5 above.	
	10. Pinched wire under battery pack.	Replace wire
	11. Shorted jumper on battery pack.	Recheck battery and/or replace.
	12. Battery crooked in battery holder.	Position battery in holder properly.
DC zero changes when switching DCV ranges.	Same as #6 above.	
	Same as #8 above.	
	13. PC board is contaminated or has a short in DC voltage divider.	Check for presence of stray voltage across voltage divider.
	14. Elect. zero incorrectly set.	Readjust zero - mech. and elect.
DC zero changes when switching from +DCV to -DCV.	15. Mechanical zero adjust on meter incorrectly set.	Turn instrument off. Rotate meter adjust screw for exact zero meter indication.
Incorrect accuracy DC ranges.	16. R37-R40 improperly set.	Recalibrate
	17. Defective resistors in voltage divider.	Check R25 thru R31
	Same as #4 above.	
Incorrect accuracy AC ranges only.	18. R13 improperly set.	Recalibrate
	19. Open or defective resistors in voltage dividers.	Check R15 thru R22
	Same as #4 above.	
	20. C11 leaky.	Replace
	21. Defective AC amplifier.	Check Q4, Q5
ACV Hi frequency fall-off.	Same as #8 above.	
	22. Improper setting of C10.	Recalibrate on 3AC range.
	23. Low gain in AC amplifier.	Check Q4, Q5
Incorrect accuracy ohms ranges only.	Low battery B1.	Check 1.35V min.
	Defective range resistors.	Check R25 thru R31

ACCESSORIES

LEATHER
CARRYING
CASE

MODEL 639-OS
Part No. 101-793

CASE 639-OS

Black leather case, has built-in stand on back. Flaps open to permit use of tester in case. Compartment for accessories. For use with 600 series testers. Felt lined. Leather strap handle.

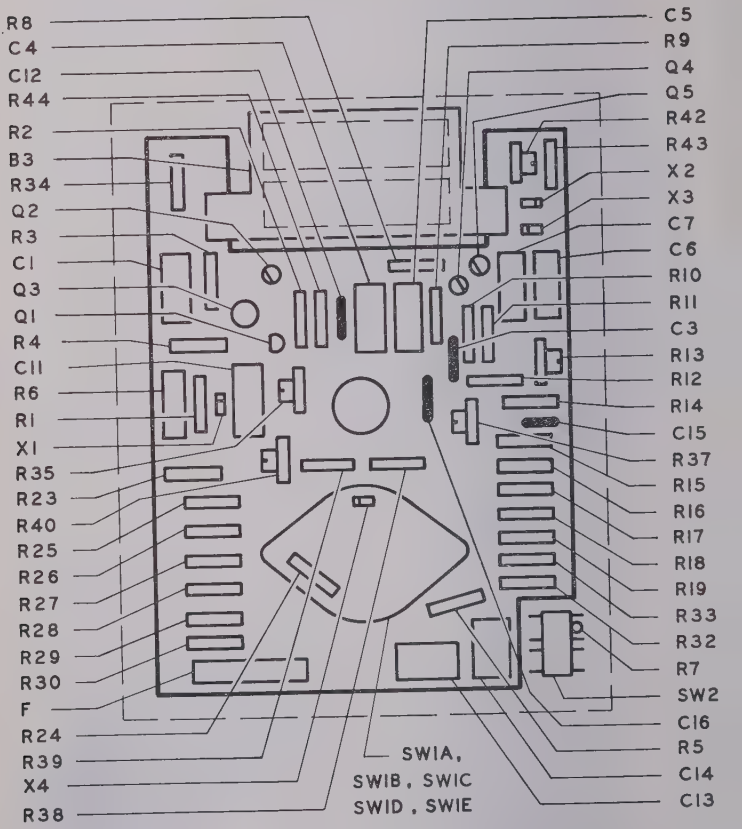


Fig. 13. Parts Location (Circuit Board)

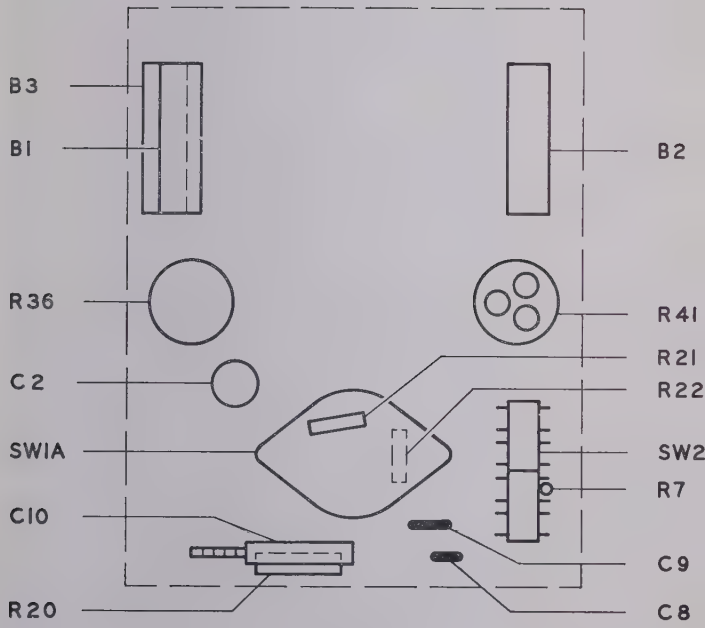


Fig. 14. Parts Location (Panel)

REPLACEMENT PARTS FOR MODEL 601

CKT. SYM.	REQ.	DESCRIPTION	PART NO.
		Lead Assembly, Ground	79-261
		Lead Assembly, Probe	79-267
B1	1	Battery, 1½ V, "AA"	37-39
B2	1	Battery, 1½ V, "AA"	37-39
B2	1	Battery, 1½ V, "AA"	37-39
B3	1	Battery, 1½ V, "AA"	37-39
B3	1	Battery, 1½ V, "AA"	37-39
B3	1	Battery, 1½ V, "AA"	37-39
B3	1	Battery, 1½ V, "AA"	37-39
B3	1	Battery, 1½ V, "AA"	37-39
B3	1	Battery, 1½ V, "AA"	37-39
B3	1	Battery, 1½ V, "AA"	37-39
	1	Case, Complete W/Handle	10-2365
M	1	Instrument Assembly	52-3797
	1	Knob Assembly (Selector Switch)	34-100
	1	Shaft Assembly (Selector Switch)	3336-7
	1	Washer	14-215
	2	Detent Ball	11935
	1	Spring, Detent	42-252
	1	Retaining Ring	11966
BD2		Circuit Board W/Components	87-146
BD3	1	Circuit Board W/Switch and Components	87-147
C1, C6, C7	3	Capacitor, 5MFD	43-281
C2, C16	2	Capacitor, .04MFD	43-286
C3, C12	2	Capacitor, .02MFD	43-125
C4	1	Capacitor, 1MFD	43-280
C5	1	Capacitor, 10MFD	43-282
C8	1	Capacitor, .01MFD	43-198
C9	1	Capacitor, .0022MFD	43-284
C10	1	Capacitor, Variable, 12PF	43-287
C11	1	Capacitor, 30MFD	43-279
C13, C14	2	Capacitor, .15MFD	43-283
C15	1	Capacitor, .005MFD	43-200
C18	1	Capacitor .04 MFD	43-286
X1	1	Diode	10991
X2, X3	2	Diode	127-27
X4	1	Diode	2250-55
R1	1	Resistor, 68K Ohm	15-1657
R2, R4	2	Resistor, 27K Ohm	15-5243
R3	1	Resistor, 47K Ohm	15-2498
R5	1	Resistor, .5 Ohm	15-4723
R6	1	Resistor, 25K Ohm	15-4874
R7	1	Resistor, 200 Ohm	15-1489
R8	1	Resistor, 1 Meg. Ohm	15-824
R9	1	Resistor, 4.7K Ohm	15-1687
R10	1	Resistor, 33K Ohm	15-2507
R11	1	Resistor, 4.7K Ohm	15-1687
R12	1	Resistor, 360 Ohm	15-1446
R13	1	Resistor, Variable, 500 Ohm	16-190
R14, R15	2	Resistor, 100 Ohm	15-3438

REPLACEMENT PARTS FOR MODEL 601

CKT. SYM.	REQ.	DESCRIPTION	PART NO.
R16	1	Resistor, 216.7 Ohm	15-5289
R17	1	Resistor, 688 Ohm	15-5290
R18	1	Resistor, 2184 Ohm	15-5291
R19	1	Resistor, 6792 Ohm	15-5292
R20	1	Resistor, 10 Meg. Ohm	15-851
R21	1	Resistor, 21.6K Ohm	15-5033
R22	1	Resistor, 10K Ohm	15-1014
R23	1	Resistor, 330K Ohm	15-2309
R24	1	Resistor, 220K Ohm	15-1732
R25	1	Resistor, 9.09 Meg. Ohm	15-5038
R26	1	Resistor, 909K Ohm	15-5032
R27	1	Resistor, 90.9K Ohm	15-5116
R28	1	Resistor, 9.09K Ohm	15-5031
R29	1	Resistor, 909 Ohm	15-5030
R30	1	Resistor, 90.9 Ohm	15-5029
R31	1	Resistor, 9.92 Ohm	15-5293
R32, R33	2	Resistor, 470K Ohm	15-1465
R34	1	Resistor, 3.6K Ohm	15-1456
R35	1	Resistor, Variable, 5K Ohm	16-194
R36	1	Resistor, Variable, 10K Ohm	16-192
R37, R40	2	Resistor, Variable, 250 Ohm	16-205
R38	1	Resistor, 1.65K Ohm	15-5279
R39	1	Resistor, 3.92K Ohm	15-4998
R41	1	Resistor, Variable, 25K Ohm	16-187
R42	1	Resistor, Variable, 100K Ohm	16-188
*R43	1	Resistor, (Value may vary from 4.7K to 150K)	
*R44	1	Resistor, (Value may vary from 220K to 330K)	
R45	1	Resistor, 150 Ohm	15-2476
R46	1	Resistor, 3K Ohm	15-5055
Q1	1	Transistor	127-26
Q2		Transistor, Brown	127-30
Q2		Transistor, Red	127-31
Q2		Transistor, Orange Only One Used Per Tester (Specify Color and Part No. when Ordering)	127-32
Q3	1	Transistor	127-23
Q4	1	Transistor	127-34
Q5		Transistor, Yellow	127-33
Q5		Transistor, Green Only One Used Per Tester (Specify Color and Part No. when Ordering)	127-34
F	1	Fuse, 2 Amp	3207-39
SW1A	1	Switch, Rotary (Deck A)	22-537
SW1B	1	Switch, Rotary (Deck B)	22-539
SW1C	1	Switch, Rotary (Deck C)	22-540
SW1D	1	Switch, Rotary (Deck D)	22-541
SW1E	1	Switch, Rotary (Deck E)	22-542
SW2	1	Switch, Push Button	22-544
	1	Label, Nameplate	58-339
	1	Panel, Etched Aluminum	28-906
	2	Knob, Red	34-74
	1	Jack, Shielded	11942

* Specify Value When Ordering

WARRANTY

The Triplett Electrical Instrument Company warrants instruments manufactured by it to be free from defective material or factory workmanship and agrees to repair or replace such instruments which under normal use and service, disclose the defect to be the fault of our manufacturing. Our obligation under this warranty is limited to repairing or replacing any instrument or test equipment which proves to be defective, when returned to us transportation prepaid, within ninety (90) days from the date of original purchase.

This warranty does not apply to any of our products which have been repaired or altered by unauthorized persons or service stations in any way so as, in our judgment to injure their stability or reliability or which have been subject to misuse, negligence or accident or which have had the serial number altered, effaced, or removed. Neither does this warranty apply to any of our products, which have been connected, installed, or adjusted otherwise than in accordance with the instructions furnished by us. Accessories including all vacuum tubes and batteries not of our manufacture used with this product are not covered by this warranty.

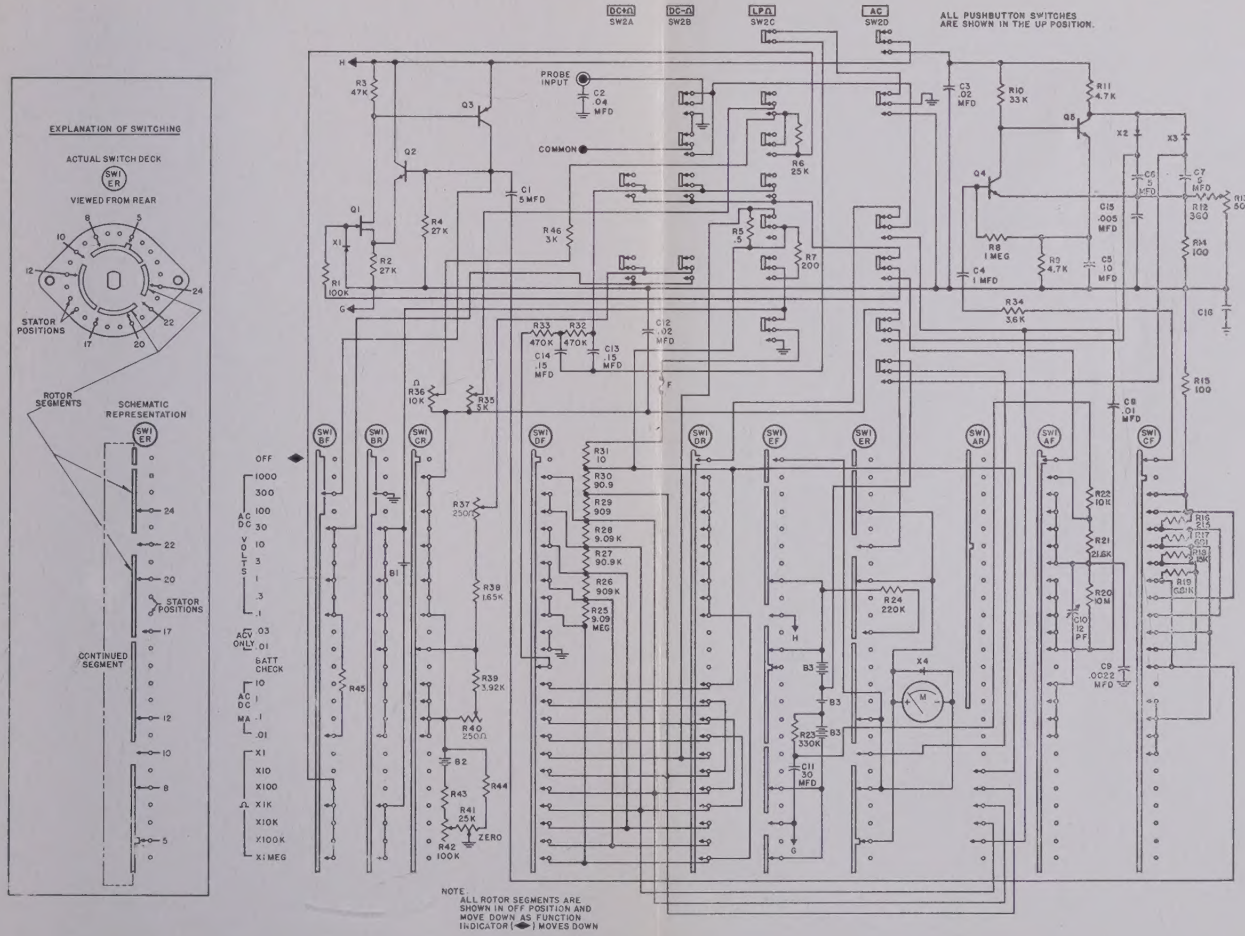
The Triplett Electrical Instrument Company reserves the right to discontinue models at any time, or change specifications, price or design, without notice and without incurring any obligation.

Upon acceptance of this material the purchaser agrees to assume all liability for any damages, and bodily injury which may result from the use or misuse of the material by the purchaser, his employees, or others and that The Triplett Electrical Instrument Company shall incur no liability for direct or consequential damage of any kind.

Parts will be made available for a maximum period of five (5) years after the manufacture of this equipment has been discontinued. Parts include all materials, charts, instructions, diagrams, accessories, et cetera, which were furnished in the standard or special models.

This warranty and conditions of sale are in lieu of all others expressed or implied and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

MODEL 601 SCHEMATIC



MP MASTER

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